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Square Planar

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Square Planar: A term used to describe molecules and polyatomic ions that have one atom in the center and four atoms at the corners of a square.



Tomorrow's Energy
Peter Hoffmann



Uncle Tungsten
Oliver W. Sacks

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Single covalent bond

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Square Planar Complex: Complex in which the metal is in the center of a square plane, with ligand donor atoms at each of the four corners

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Nature's Building Blocks...
John Emsley



Anatomy of a Food Addict...
Anne Katherine

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Rare Earth Mixed

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Lanthanum

Cerium

Praseodymium

Niodymium

Samarium

Europium

Gadolinium

Terbium

Dysprosium

Holmium

Erbium

Thulium

Ytterbium

Lutetium

Neodymium

Quick Access

Europium, atomic no.: **63**, symbol as **Eu**, weight at **151.96**, is utilized primarily for its unique luminescent behavior. Excitation of the Europium atom by absorption of ultra violet radiation can result in specific energy level transitions within the atom creating an emission of visible radiation. In energy efficient fluorescent lighting, Europium provides not only the necessary red, but also the blue. Several commercial blue phosphors are based on Europium for color TV, computer screens and fluorescent lamps. Its luminescence is also valuable in medical, surgical and biochemical applications.

Product Available

Name	Formula	Grade	Code	Description	Application
Europium Carbonate	$\text{Eu}_2(\text{CO}_3)_3$	99.99%	6323	White powder	Phosphor
		99.9%	6325		
Europium Chloride	$\text{EuCl}_3 \cdot 6\text{H}_2\text{O}$	99.99%	6333	White materials	Phosphor
		99.9%	6335		
Europium Fluoride	$\text{EuF}_3 \cdot 3\text{H}_2\text{O}$	99.9%	6345	White powder	Metallurgy
Europium Metal	Eu	99.999%	6361	Silver grey pieces	Nuclear industry
		99.99%	6363		
		99.95%	6364		
		99.9%	6365		
		99%	6367		
Europium Nitrate	$\text{Eu}(\text{NO}_3)_3$	99.99%	6373	White materials	Phosphor
		99.9%	6375		
Europium Oxalate	$\text{Eu}_2(\text{C}_2\text{O}_4)_3 \cdot 10\text{H}_2\text{O}$	99.99%	6383	White materials	Phosphor
		99.9%	6385		
Europium Oxide	Eu_2O_3	99.9999%	6390	Pinkish white powder	Nuclear industry; Phosphor for CRT & three bands lamps; Plat plasma Screen;
		99.999%	6391		
		99.995%	6392		
		99.99%	6393		
		99.9%	6395		
		99.5%	6396		
		99%	6397		
Europium Sulphate	$\text{Eu}_2(\text{SO}_4)_3$	99.99%	6303	White materials	Phosphor
		99.9%	6305		
Yttrium/Europium Co-Precipitated Oxide	$(\text{Y}/\text{Eu})_2\text{O}_3$	4.00%	6304	White powder	Phosphor for CRT & three bands lamps;
		4.50%	6305		
		5.40%	6307		
		6.50%	6306		
Yttrium/Europium/Terbium Co-Precipitated Oxide	$(\text{Y}/\text{Eu})_2\text{O}_3:\text{Tb}407$	25ppm	6308	White powder	Phosphor for CRT & three bands lamps;

The standard specification, MSDS sheet, price, lot weight and lead time are all ready on request, please just click at the product's name, or note the product code, you will receive our prompt reply within 24 hours.

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[General | States | Energies | Oxidation & Electrons]
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 [Radius | Conductivity | Abundance | History]

General

Name	Europium	Symbol	Eu
Atomic number	63	Atomic weight	151.96
Density @ 293 K	5.259 g/cm ³	Atomic volume	28.9 cm ³ /mol
Group	Rare Earth	Discovered	1901

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States

State (s, l, g)	s		
Melting point	1095.2 K	Boiling point	1712 K
Heat of fusion	9.210 kJ/mol	Heat of vaporization	143.50 kJ/mol

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Energies

1st ionization energy	546.7 kJ/mole	Electronegativity	1.12
2nd ionization energy	1085 kJ/mole	Electron affinity	50 kJ/mole
3rd ionization energy	2405 kJ/mole	Specific heat	0.18 J/gK
Heat atomization	178 kJ/mole atoms		

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Oxidation & Electrons

Shells	2,8,18,25,8,2	Electron configuration	[Xe] 4f ⁷ 6s ²
Minimum oxidation number	0	Maximum oxidation number	3
Minimum common oxidation number	0	Maximum common oxidation number	3

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Appearance & Characteristics

Structure	bcc: body-centered cubic	Color	silvery-white
Uses	alloys, color TV phosphor	Toxicity	
Hardness	mohs	Characteristics	hard

and heating the mixture in a tantalum crucible under high vacuum. The element is collected as a silvery-white metallic deposit on the walls of the crucible. As with other rare-earth metals, except for lanthanum, europium ignites in air at about 150 to 180C. Europium is about as hard as lead and is quite ductile. It is the most reactive of the rare-earth metals, quickly oxidizing in air. It resembles calcium in its reaction with water. Bastnasite and monazite are the principal ores containing europium. Europium has been identified spectroscopically in the sun and certain stars. Seventeen isotopes are now recognized. Europium isotopes are good neutron absorbers and are being studied for use in nuclear control applications. Europium oxide is now widely used as a phosphor activator and europium-activated yttrium vanadate is in commercial use as the red phosphor in color TV tubes. Europium-doped plastic has been used as a laser material. With the development of ion-exchange techniques and special processes, the cost of the metal has been greatly reduced in recent years. Europium is one of the rarest and most costly of the rare-earth metals. It is priced about about \$7500/kg.

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